

# **POTTERTON** ***FLAMINGO II*** **RS and CF 20-30 gas fired boilers**

Potterton Flamingo II RS and CF 20-30  
5.9 to 8.8kW (20,000 to 30,000 Btu/h) Output

#### **IMPORTANT**

This appliance is for use with Natural Gas only. It must be installed by a competent person as stated in the Gas Safety (Installation and Use) Regulations 1984.

Leave these instructions adjacent to the gas meter.

#### **CHOICE OF BALANCED OR OPEN FLUED MODELS**

**THE BALANCED FLUE MODEL CAN  
DISCHARGE TO THE LEFT, RIGHT OR  
REAR OF THE BOILER.**

\*Compact in size; designed to building modular dimensions to blend unobtrusively with other kitchen furniture.

\*Pipework can be run behind the boiler, vertically upwards, downwards or across within its own width, enabling cupboards to be positioned close to both sides.

\*On fully pumped systems, a static head of only 1ft is required.

\*The balanced flue model has an adjustable length, balanced flue terminal to suit walls up to 15" thick.

\*Boiler available with 24in flue if required.

\*Optional extra 5-position programmer available in

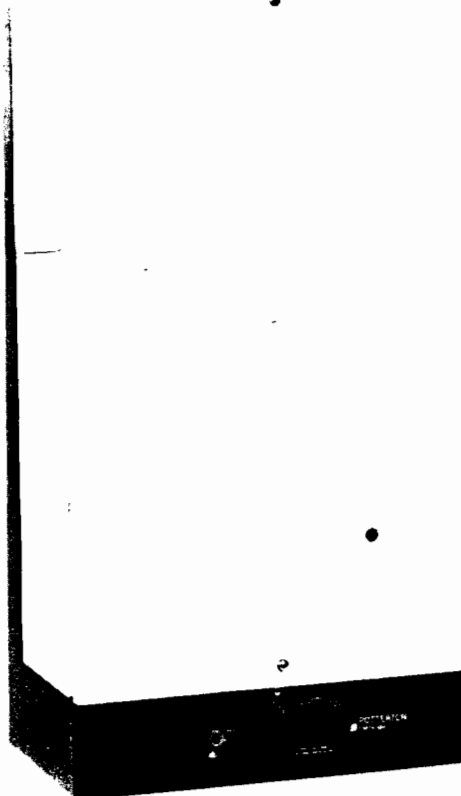
\*kit form for on-site fitting to boiler facia panel.

\*No by-pass pipework needed in the system. \*

\*Composite gas valve with single control button operation, incorporating a flame safety device.

\*Piezo-electric push button ignition for easy lighting on both models.

\*Can be fitted beneath a standard height kitchen working surface.



**INSTALLATION INSTRUCTIONS**

## GENERAL

These Potterton wall mounted appliances are automatically controlled and have been designed for combined systems, e.g. small bore or micro-bore central heating with an indirect domestic hot water supply which can either have pumped or gravity circulation. The boilers can also be used on pumped central heating only, gravity domestic hot water only, or pumped domestic hot water only systems.

### DESCRIPTION — See Fig. 1 and 3

The boilers are slim, space saving appliances which can be installed on the inside of an external wall or on an internal wall as long as, with the balanced flue model, one side of the boiler is next to an external wall, either in a kitchen or utility room or inside a suitably ventilated purpose designed or modified compartment. They can also be fitted beneath a standard height working surface although in such an installation, an additional kit of parts, available as an optional extra, must be used to reposition the main gas cock to one side of the boiler and to move the thermocouple connection to the side of the gas control valve instead of the rear; this would also apply in any installation where a clearance beneath the boiler of less than the recommended minimum (4in) was necessary. The CF boiler must not be installed in a room containing a bath or shower, but the RS model may be provided the installation conforms to I.E.E. regulations.

The boilers, apart from their controls, are enclosed in insulated, white, stove enamelled, sheet steel casings. The controls are mounted beneath the casing in a drawer-shaped, saluki-bronze coloured cover. Saluki-bronze side panels, to blank off the space between the boiler and the wall, are available as optional extras. Also available as an optional extra is a casing extension which fits on top of the existing boiler casing and will enclose a circulating pump and its pipework on the RS version, or conceal the water and flue pipes on the CF model. The standard balanced flue terminal and ducting is suitable for walls up to 15in thick. However, a special terminal and ducting is available, as an optional extra, which is suitable for walls up to 24in thick.

### HEAT EXCHANGER

The heat exchanger consists of two castings secured together with tie-rods and jointed with "O" rings. A finned flueway is formed between the two castings with waterways at each side. The rear casting has two flow connections at the top and two return connections at the bottom; the pocket for the thermostat phial is fitted in a similar connection at the upper right hand side of the front casting. A fluehood, mounted on top of the heat exchanger, has on the balanced flue model, a 90 degree bend bolted to it which can be adjusted to direct the flue gases either to the left, right or rear of the boiler, where they are vented to atmosphere through the terminal on the outside wall of the building. The fluehood on the open flue version has the spigot for the installer to connect the fluepipe.

### COMBUSTION CHAMBER AND BURNER

The combustion chamber is formed by a short steel skirt attached to the bottom of the heat exchanger, which ensures that the products of combustion are directed upwards through the heat exchanger castings. The laterally mounted main burner is secured at both ends to the bottom of the boiler casing. The right hand bracket also

mounts the pilot burner, thermocouple and electrode.

## BOILER CONTROLS

The control system has been simply designed and is fail safe and easy to operate. Once the main gas cock has been turned on, the control button on the gas control valve is pressed and held in to allow gas to pass to the pilot burner, where it is lit by operation of the piezo electric igniter. As soon as the thermocouple heats up and energises the control valve (approximately 20 secs), the control button is released and the main burner lit by turning on the boiler thermostat.

The thermostat knob can be set to 0, Min. 1, 2, 3, 4 and Max. The graduations Min. to Max. correspond approximately to a temperature range of 55°C to 82°C (130°F to 180°F).

### THE SYSTEM — See Fig. 6 to 10

The boiler can be installed in most types of system, but the following notes are given as a general guide. The general recommendations given in BS5376 Part 2 and BS5449 Part 1, should be observed.

1. Fully pumped systems should be designed so that the static head of the boiler is between a minimum 90mbar (3ft/w.g.) and a maximum of 2.7bar (90ft/w.g.). On systems where a 3ft/w.g. static head cannot be obtained (e.g. in flats and maisonettes) the static head may be reduced to 1ft/w.g. providing the cold feed is connected to the spare return tapping on the boiler.
2. If the head is at or near the minimum, extra care should be taken when designing the system to ensure that pumping over or sucking down at the vent pipe cannot occur.
3. All gravity systems should have a minimum effective height of 1.2m (4ft) between the centre line of the boiler heat exchanger and the centre line of the domestic hot water cylinder.
4. Most types of system controls, such as two-way valves, three-way valves, diverter valves, twin pumps, zone valves and room, cylinder and frost thermostats can be used in conjunction with this boiler.
5. It is recommended that an indirect hot water cylinder is used, incorporating a coil type of heat exchanger. In a fully pumped system, the primary pipework should include a lock shield valve.
6. The circulating pump should be selected with reference to fig. 2. The resistance through the boiler heat exchanger will not exceed 2.0 mbar (0.8in. w.g.) at a flow rate of 2.5 gall/min.
7. The resistance through any other type of system control such as three-way valves, should also be taken into account when selecting the pump; refer to their manufacturers literature.
8. The circulating pump may be fitted on either flow or return side of the boiler. If fitted on the flow and the vent pipe is located between the boiler and the pump, the risk of air being drawn into the system is reduced. If fitted on the return, the cold feed pipe should be connected between the pump and the boiler. It is recommended that the static head on the inlet side of the pump should be at least a third of the maximum pump duty.
9. A drain cock(s) should be fitted at the lowest point(s) in the system, so that the whole system can be drained.

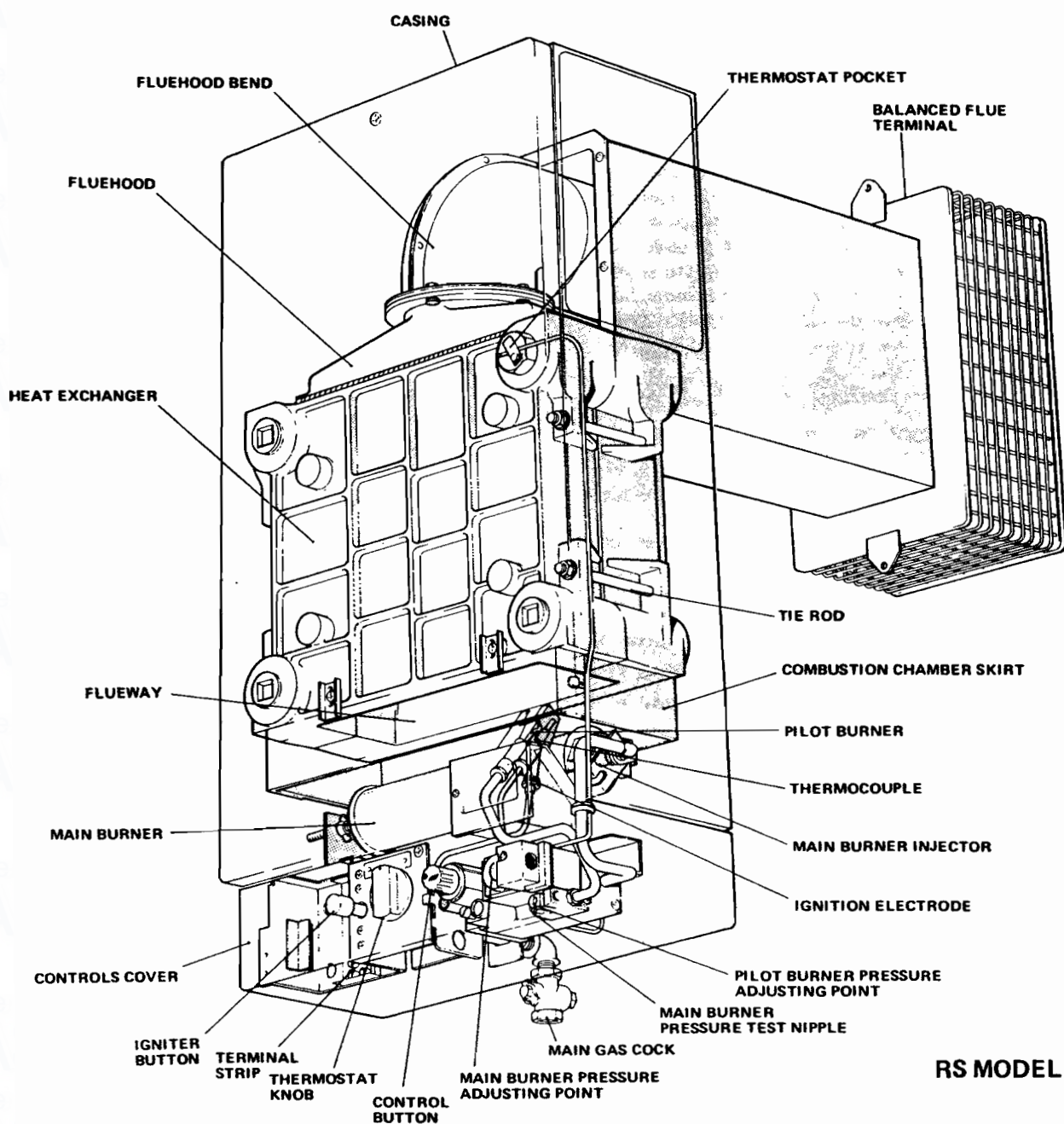
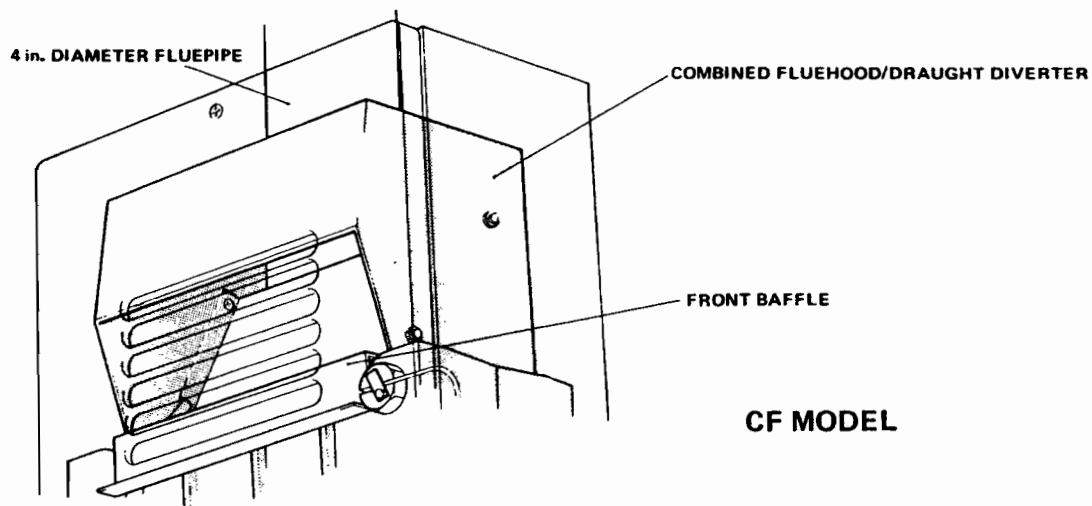


**Fig. 1 GENERAL ARRANGEMENT**

## BOILER MOUNTING SURFACE

The appliance must be mounted on a flat wall of non combustible material which will not reverberate and is sufficiently robust to take the weight of the boiler. Local Authority and Building Regulations must be observed.

## CLEARANCES AROUND THE BOILER

Any position selected for the boiler must give the following clearances for installation and maintenance:—

- 610mm (2ft.) at the front
- 25mm (1in) at the top — unless the object above the boiler, e.g. a kitchen working surface, was removable.
- 100mm (4in) at the bottom — except when the boiler is to be fitted, for instance beneath a kitchen working surface when 2" is sufficient; refer to "DESCRIPTION".
- 6mm (¼") at each side.

If the optional extra casing extension is to be used on top of the boiler to enclose a circulating pump, 178mm (7in) must be allowed above the boiler casing. All pipes can be run behind the boiler within its casing width. All connections should be pre-piped with short lengths of pipe, long enough to clear the extremities of the boiler casing. The flow and return connections can be made from above, below, or from either side. There is room beneath the boiler mounting bracket to cross the pipework from one side of the boiler to the other, although this should not often be necessary as the flow and return connections can be made at either side of the boiler.

On the CF model, any combustible material adjacent to the flue system must be so placed or shielded as to ensure that it does not exceed a temperature of 65°C (150°F).

## VENTILATION — BALANCED FLUE MODELS ONLY

If the boiler is to be installed in a confined space such as a cupboard, the space will need ventilating. Openings should be provided at the top and bottom of the cupboard, each having a free area of 108 sq. cm. (16 sq.in). Where the openings draw air direct from outside the building, the size of the free areas can be halved. Purpose designed, permanent air vents are not required in the room in which the boiler is installed, whether or not it is in a cupboard. Refer to BS.5376 Part 2, for further information.

Any internal surface of the cupboard that is made of a combustible material and is nearer to the boiler than 75mm (3in.) should be insulated as described in British Gas publication, "Material and Installation Specifications for Domestic Central Heating and Hot Water".

## BALANCED FLUE TERMINAL

The correct positioning of the balanced flue terminal on the outside wall of the building is important. It should not be near any obstruction such as a balcony, drain or stack pipe and it must not be sited near the corner of a building. Where the terminal has to be positioned near an obstruction, it is advisable to extend the terminal within its limits so that its grille clears the line of the obstruction; when this is necessary a false wall should be built around the terminal box. The terminal must not be located where its discharge could enter an open door or window, or cause a nuisance in a public right of way. When the boiler is installed under a worktop, the terminal must not be located less than 300mm (1 ft.) beneath any opening

such as a window or air vent. It is advisable to have a minimum of 600mm (2ft) of flat wall space all around the terminal. If the terminal discharges at a low level, a terminal guard, supplied as an optional extra, should be fitted. All installations should conform with the Local Authority and Building Regulations, British Standard 5440 Part 1 and British Gas publication, "Material and Installation: Specifications for Domestic Central Heating and Hot Water".

## COMBUSTION AIR AND VENTILATION REQUIREMENTS — OPEN FLUE MODELS ONLY.

General recommendations are given in BS.5440 Part 2, and the following notes are given as a general guide.

### A. Ventilation of compartments containing gas boilers.

There should be two permanent air vents, one at low level and one at high level, both communicating either directly with outside air or with a room space which is suitably ventilated. Each opening, whether left free or furnished with a grille, must have a minimum effective area in accordance with Table 1.

Any internal surface of the cupboard that is made of a combustible material and is nearer to the boiler than 75mm (3in) should be insulated as described in British Gas publication, "Material and Installation Specifications for Domestic Central Heating and Hot Water".

There must be at least 300mm (12in) clearance between the grille on the front of the boiler casing and any internal surface of the cupboard to allow for adequate air inlet for operation of the draught diverter.

### B Ventilation of rooms containing gas boilers.

The ventilation of the room containing the boiler shall include air for combustion and draught diverter dilution. This applies also when the boiler is sited in a compartment, unless the air vents are both direct to outside.

A permanent air vent shall be provided in an outside wall of the building at either a high or low level.

This opening may be:

- (a) Directly into the room or space containing the boiler or,
- (b) Via a duct through a wall or the roof of a room, (where such a method is considered, British Gas should be consulted), or
- (c) Into an adjacent room or space which has an internal permanent air vent of the same size to the room containing the boiler. It is undesirable to ventilate via a kitchen, bathroom or toilet.

The air vent should be sited as far as possible from any extractor fan to avoid short circuiting. To avoid the possibility of freezing water pipes, the vent should not be sited near the pipes.

The minimum effective area of the permanent air vent must be 20 sq.cm. (3 sq.in.).

If the room (e.g. kitchen) from which air is drawn, has an extraction fan fitted, then the opening size of the permanent air vent should take this into account to ensure that the operation of the boiler flue is not adversely affected when the extraction fan is running with all doors and windows closed.

### C. Grilles and Ducts.

Any grille and/or duct should be so sited and of a type not to become easily blocked or flooded and should offer low resistance to air flow.

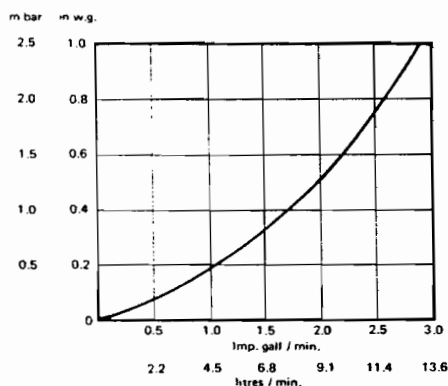


Fig. 2 PRESSURE LOSS ACROSS BOILER

## FLUE – OPEN FLUE MODELS ONLY

An efficient flue system must be provided to evacuate the products of combustion from the boiler. Reference should be made to The Building Regulations and BS.5440 Part 1 from which the following notes have been compiled for your guidance.

- Ideally a flue should rise vertically to a termination point which is unaffected by downdraught or wind eddies and is not in a pressure zone. Therefore for practical purposes, the flue should have the shortest possible run to external atmosphere, with as near vertical rise as possible; 90° bends should be avoided. The terminal must be at least above roof edge level.
- Wherever possible there should be at least 3ft. (900mm) of vertical flue from the boiler flue socket.  
NOTE: Some Gas Regions insist on a split socket in this length.
- Horizontal runs should be avoided. If a near horizontal flue run is unavoidable, it must be followed by at least twice its length of vertical flue.
- Wherever possible internal stacks, lined if necessary, should be used.
- All brick chimneys without an integral lining must be lined with either asbestos cement flue pipe to BS567 or stainless steel flexible lining.
- Where condensation is likely a means of draining must be provided.
- If an existing flue is being used, ensure that it has been thoroughly swept before lining or connecting the boiler.

TABLE 1 – COMBUSTION AIR AND VENTILATION REQUIREMENTS OF COMPARTMENTS.

| Level of Air Vent | Area for Air from Room                       | Area for Air from Outside                    |
|-------------------|----------------------------------------------|----------------------------------------------|
| High              | 104 cm <sup>2</sup><br>(16in. <sup>2</sup> ) | 52 cm <sup>2</sup><br>(8in. <sup>2</sup> )   |
| Low               | 208 cm <sup>2</sup><br>(32in. <sup>2</sup> ) | 104 cm <sup>2</sup><br>(16in. <sup>2</sup> ) |

## ELECTRICITY SUPPLY

A 220-240 volts, A.C., 50 Hz., single phase electricity supply fused to 3 amperes must be provided in accordance with the latest edition of the Institute of Electrical Engineers Regulations for the Electrical Equipment of Buildings and Local Authorities and British Gas requirements. The current rating of the wiring to the boiler must exceed 3 amperes in accordance with BS. 6500, 1975 and have a cross sectional area of at least 0.75 sq.mm. The supply to the boiler and its associated equipment should be controlled by an unswitched plug and socket or a double pole switch, so that complete isolation from the supply can be achieved to enable maintenance work to be carried out in safety.

## GAS SUPPLY

The gas meter and supply pipe should be checked to ensure that they are large enough for the boiler and any other appliance already installed; the Local Gas Regional Office will assist in this matter. The recommendations of CP. 331 Pts 2 and 3 should be observed.

## SAFETY VALVE AND THERMOMETER

If the local authorities regulations stipulate that a safety valve should be fitted, this should be installed in the flow pipework as close to the boiler as possible. If a thermometer is to be installed, preferably of the immersion type, this should also be fitted in the flow pipework as close to the boiler as possible.

## MAINTENANCE

The efficient performance of the boiler is dependent upon regular servicing which should be carried out annually. Maintenance is best arranged by a contract placed with Potterton International Limited, and further details are available from the local Potterton Regional Service office.

Maintenance is a simple matter as once the casing front cover has been removed, all parts that are likely to require servicing are easily accessible.

## SETTING UP

Each boiler has to be adjusted once it is installed and this is a skilled job which should only be undertaken by suitably qualified Engineers. Potterton International offer this service on a chargeable basis.

## GENERAL DATA:

|                           |                                               |
|---------------------------|-----------------------------------------------|
| Input:                    | 7.9 kW to 11.6 kW<br>(27,000 to 39,500 Btu/h) |
| Output into Water:        | 5.9 kW to 8.8 kW<br>(20,000 to 30,000 Btu/h)  |
| Output into Air (Approx): | 0.55 kW (1900 Btu/h)<br>approx.               |
| Max. Working Head:        | 2.7 bar (90ft. w.g.)                          |
| Water Content:            | 4.9 litres (1.08 gall.)                       |
| Main Gas Cock:            | ½ in. BSP                                     |
| Combination Gas Control:  | ½ in. BSP Honeywell<br>V4600A                 |
| Thermostat:               | Ranco C26                                     |
| Main Burner:              | Furigas                                       |
| Pilot Burner:             | Honeywell, Q359A                              |
| Pilot Igniter:            | Vernitron with Buccleuch<br>electrode         |
| Weight Empty:             | 52.6 kg. (116 lbs)                            |

## ADDITIONAL CONTROLS

This boiler is supplied with the facility of fitting a five-position programmer on the boiler adjacent to the gas control valve. The programmer is supplied in kit form, as an optional extra, and can be easily fitted on site; the kit includes a new fascia panel for fitting to the controls tray. The programmer is fully described in its own data sheet, available on request.

Potterton Electronic Programmers are available as optional extras. These electronic programmers have been developed to compliment your boiler and offer the user a variety of programmes to suit individual requirements and systems. They are attractively styled with a constant digital clock display, slider and push buttons which are easy to use and understand. This control is fully described in its own data sheet, available on request.

## LITERATURE

The following literature is supplied with each boiler:

Data and Installation Instructions  
Users Guide Card

## NOTE:

Illustrated parts catalogues for these boilers are available to installers and servicing agents on request to:

Potterton International Limited,  
Brooks House,  
Coventry Road,  
Warwick CV34 4LL.

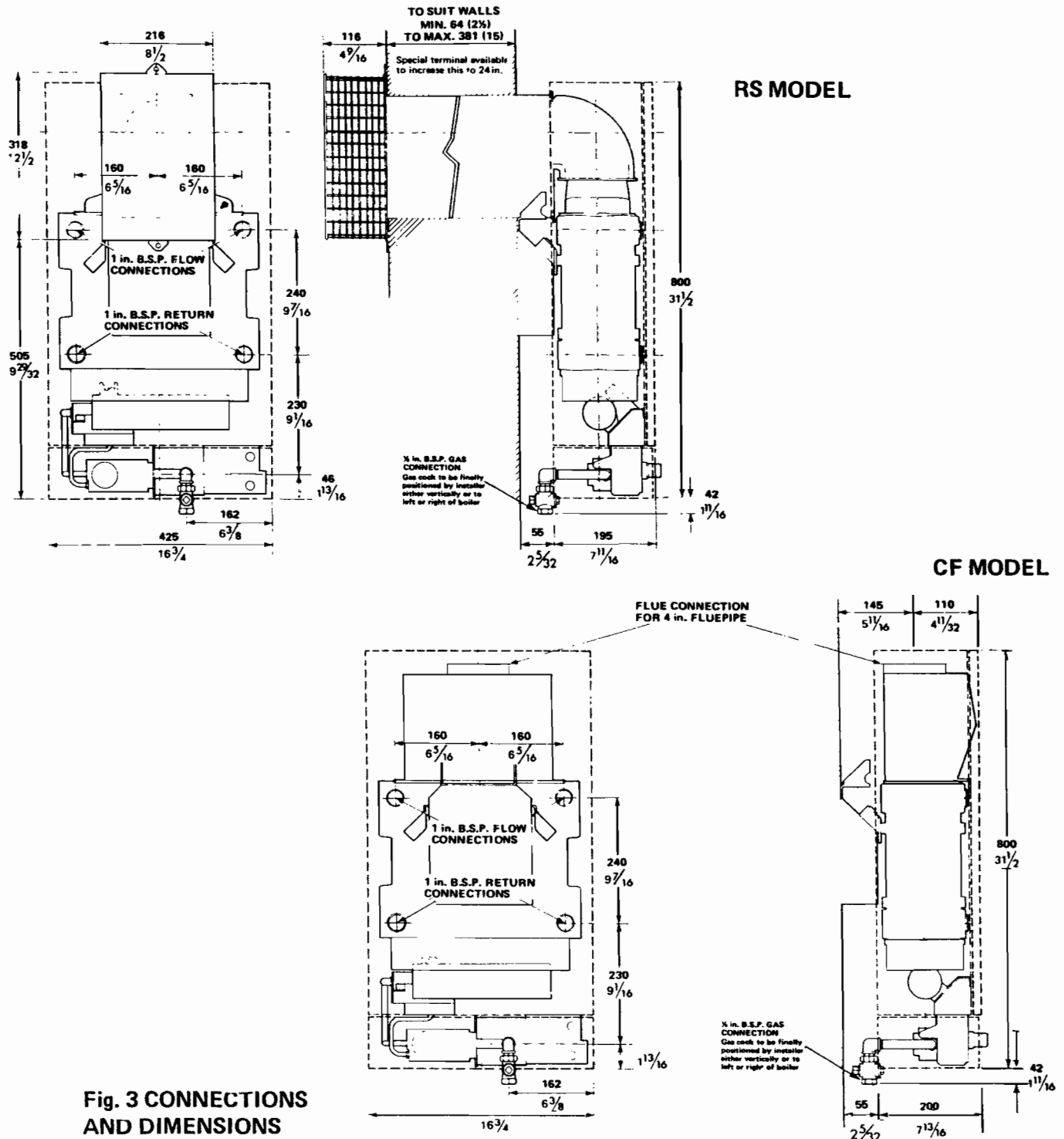


**Fig. 3 CONNECTIONS AND DIMENSIONS**

# INSTALLATION INSTRUCTIONS

Installation must be carried out in accordance with the Gas Safety Regulations, Building Regulations, by-laws of the local water undertaking, relevant British Standard Codes of Practice and I.E.E. recommendations. Reference should also be made to British Gas publication "Material and Installation Specifications for Domestic Central Heating and Hot Water"

## 1. UNPACKING

A. The appliance will arrive on-site packed in one or two cartons as follows:

|                                                                            |                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Carton No. 1:</b><br>Balanced Flue Terminal<br>Flue and Fresh Air ducts | <b>Carton No. 2:</b><br>The Boiler assembly<br>Template — Balanced flue<br>model only.<br>Literature<br>Wall Mounting Bracket<br>Accessory Pack<br>Fluehood - Balanced flue<br>model only.<br>Fluehood bend - Balanced<br>flue model only.<br>Gas Cock and Elbow<br>Boiler support bracket<br>Casing blanks - Balanced<br>flue model only.<br>Thermostat knob. |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

NOTE:- Carton No. 1  
is only applicable to  
the balanced flue model.

B. Unpack the boiler carton and remove the template and literature pack. Lay the boiler on its back, then unscrew the two screws and remove the front cover. Remove the cardboard packing from on top of the heat exchanger; this contains the last eight items, where applicable, listed above.

C. Unscrew the captive securing screw and gently slide the controls cover from the boiler.

## 2. FITTING THE WALL MOUNTING BRACKET

NOTE: The cardboard template for use with balanced flue models, has been designed for marking out the wall for boilers with either a rear or side flue outlet. If a side outlet is to be marked, it has been assumed that the boiler will be fitted tightly into the corner. However, allowance should be made if the corners of the wall are not square or vertical, by positioning the template up to a maximum of 1 in. from the outside wall. This can be done by marking the centre of the boiler position on the wall, then using a spirit level or plumb line, dropping a long centre line which can then be lined up with the boiler centre marked on the template.

CAUTION: Positioning the template away from the outside wall must be done only on walls up to 14in. thick.

A. Using the template where applicable, mark out the three screw holes on the wall where the wall mounting bracket is to be fitted and the position of the flue and fresh air duct. There are five screw hole positions on the template for the mounting bracket so that the installer can select those in solid brickwork and not in mortar. The lower hole and two of the upper four must be used.

B. On balanced flue models only, cut the hole through the wall for the flue and fresh air duct; the size of the outer duct is approximately 140mm x 237mm (5.1/2in. x 9.3/8in.).

C. Drill the three screw holes for the wall mounting bracket and insert wallplugs (Accessory Pack A).

D. Screw the wall mounting bracket to the wall using three number 12 x 2 in. long woodscrews, cup and flat washers (Accessory Pack A). Ensure that the bracket is level and square on the wall.

NOTE: The thickness of the wall plaster in some older properties could be excessive and in these instances it is recommended that 2½in. long securing screws are used in operation D.

## 3. CUTTING THE DUCTING TO SIZE — BALANCED FLUE MODELS ONLY.

A. Measure the thickness of the wall, then for a boiler with a rear outlet, add 55mm. (2.5/32in.) to the thickness and cut the air duct to that length, measuring the duct from the flanged end. For a boiler with a side outlet, 12mm (½in.) must be added to the wall thickness, except in cases where the template was not fitted right into the corner of the wall in which case, the distance the template had been moved out (up to a maximum of 1 in.) must also be added.

B. Take the thickness of the wall, then for a boiler with a rear outlet, add 55mm. (2.5/32in.) to the thickness and cut the flue duct to that length, measuring from the rear face of the terminal wall plate (the face with the two triangular securing brackets welded to it). For a boiler with a side outlet, 130mm. (5.1/8in.) must be added to the wall thickness, except in cases where the template was not fitted right into the corner of the wall in which case, the distance the template had been moved out (up to a maximum of 1 in.) must also be added.

C. Place the air duct in the hole in the wall. On boilers with a rear outlet, make good the inside surface of the wall. On boilers with a rear outlet, the square section of the duct must run through the U-shaped section on top of the wall mounting bracket, with the flange on the end of the duct being pushed up hard against the bracket.

## 4. PREPARING THE BOILER

A. With the boiler still on its back on the floor, on balanced flue models only, fit the sealing strip supplied all around the flange of the fresh air duct (positioned in the wall) where it will connect with the boiler and around the flanges of the two casing blanks. It will be necessary to make holes in the sealing tape to accommodate the securing screw (see Fig. 4). Fit the two blanks to blank off the two unused duct openings in the boiler casing, securing each with six M4 nuts (Accessory Pack D).

B. Turn the boiler over and lay it on its front face. When doing this, position a wooden block or similar between the upper part of the heat exchanger and the floor to support the casting when its two upper securing nuts are removed in the next operation.

C. Secure the boiler support bracket to the back of the boiler, using the upper two nuts on the two longer studs, used for securing the boiler heat exchanger to the casing.

## 5. PREPIPING THE GAS AND WATER CONNECTIONS

The boiler has been designed so that all pipework to its connections can be concealed within its own width. This enables cupboards to be positioned close up either side with the pipework leaving the boiler at the top and/or bottom as required. Because the pipework connections are behind the boiler, short lengths of pipe should be connected to the appropriate tappings before the boiler is lifted into position, and terminated just clear of the boiler for connecting to the system.

### A. Combined Gravity System

- (1) Connect a suitable length of 28mm. pipe to one of the 1in. BSP water connections at the top of the heat exchanger. This is for the flow to the domestic hot water cylinder which must be separate from the pumped flow to the heating circuit.
- (2) Connect a suitable length of 22mm pipe to the remaining 1in. BSP flow connection. This is for the flow to the heating circuit. There is room to split the flow behind the boiler if required. The circulating pump can be fitted on either the flow or return, above or below the boiler; refer to "The System" and the pump manufacturers instructions.
- (3) Connect a suitable length of 28mm pipe to one of the 1in. BSP return connections at the bottom of the heat exchanger. This is for the return from the domestic hot water cylinder and if possible, should be diagonally opposite to the flow connection.
- (4) Connect a suitable length of 22mm pipe to the remaining lower 1in. return connection. This is for the return from the heating circuit.  
NOTE: Ensure that the fittings to the connections do not protrude more than 55mm from the boiler casing as they may foul the wall.

### B. Fully Pumped System or Pumped Central Heating Only.

- (1) Connect a suitable length of 22mm pipe to one of the 1 in. BSP rear facing flow connections at the top of the heat exchanger. The vent pipe should be connected into the flow pipe as close to the boiler as possible. Blank off the remaining 1 in. BSP rear facing flow connection.
- (2) Connect a suitable length of 22mm pipe to one of the lower 1 in. BSP return connections.
- (3) The remaining 1 in. return connection can either be blanked off or used to connect the cold feed.
- (4) The circulating pump can be fitted in any position on either the flow or return to suit the particular installation. Refer to "The System" and the pump manufacturers instructions.

### C. Boiler Main Gas Cock

- (1) The main gas cock, complete with a union nut and liner, and an elbow, are supplied loose but must be fitted to the inlet pipework on the boiler. The gas cock must be located in the most suitable position for operation.

NOTE: If the boiler is to be fitted beneath a kitchen working surface or in any position where there is less than the minimum clearance available beneath the boiler, the gas cock will have to be moved to one side of the boiler and this should be done at this stage, using the optional extra fitting kit. Full instructions are supplied with the kit.

- (2) Connect a suitable length of 15mm pipe to the gas cock, terminating it in length which can be easily connected to the main supply, once the boiler is in position on the wall.

## 6. FITTING THE BOILER ON THE WALL

- A. Stand the boiler on the floor in a vertical position, so that it is supported on its two metal transportation legs. Lift the boiler on to the bracket on the wall. Remove the two legs, then use one leg, secured to the centre of the lower bracket beneath the boiler, to provide a distance piece between the bottom of the boiler and the wall; the securing screw for the leg will be found already screwed into the captive nut beneath the panel.

### B. Balanced Flue Models only

- (1) Secure the air duct in the wall to the back or side of the boiler casing with the six screws. (Accessory Pack C), entering them from inside the boiler casing.
- (2) Offer up the flue duct/terminal assembly from outside the house, locating the square section on the back of the terminal inside the air duct in the wall. Mark the two securing hole positions on the wall, then remove the assembly and drill the holes in the wall, inserting two No. 8 x 1 in. long Rawl-plugs (Accessory Pack B).
- (3) Make good the outside surface of the wall, then fit the flue duct/terminal in position, securing it to the wall with the two No. 8 x 1 in. long screws (Accessory Pack B).
- (4) Secure the fluehood to the top of the heat exchanger with the two M6 x 12mm screws and washers (Accessory Pack E). Ensure a good seal is made all around the glass rope gasket.  
CAUTION: It is most important that when installing a boiler with either a rear or left hand flue outlet, that the fluehood is positioned with the two closest holes in its circular flange located towards the left hand side of the boiler. Likewise, if the boiler has a right hand flue outlet, the fluehood must be turned through 180° so that the two holes are located towards the right hand side of the boiler.
- (5) Locate the fluehood bend into the end of the flue-duct in the wall, then secure the fluehood bend to the fluehood with the three M5 x 10mm long screws and washers (Accessory Pack F). Several screw holes and captive nuts are located around the flanges of the two parts so that these are always in alignment whichever way the fluehood bend is

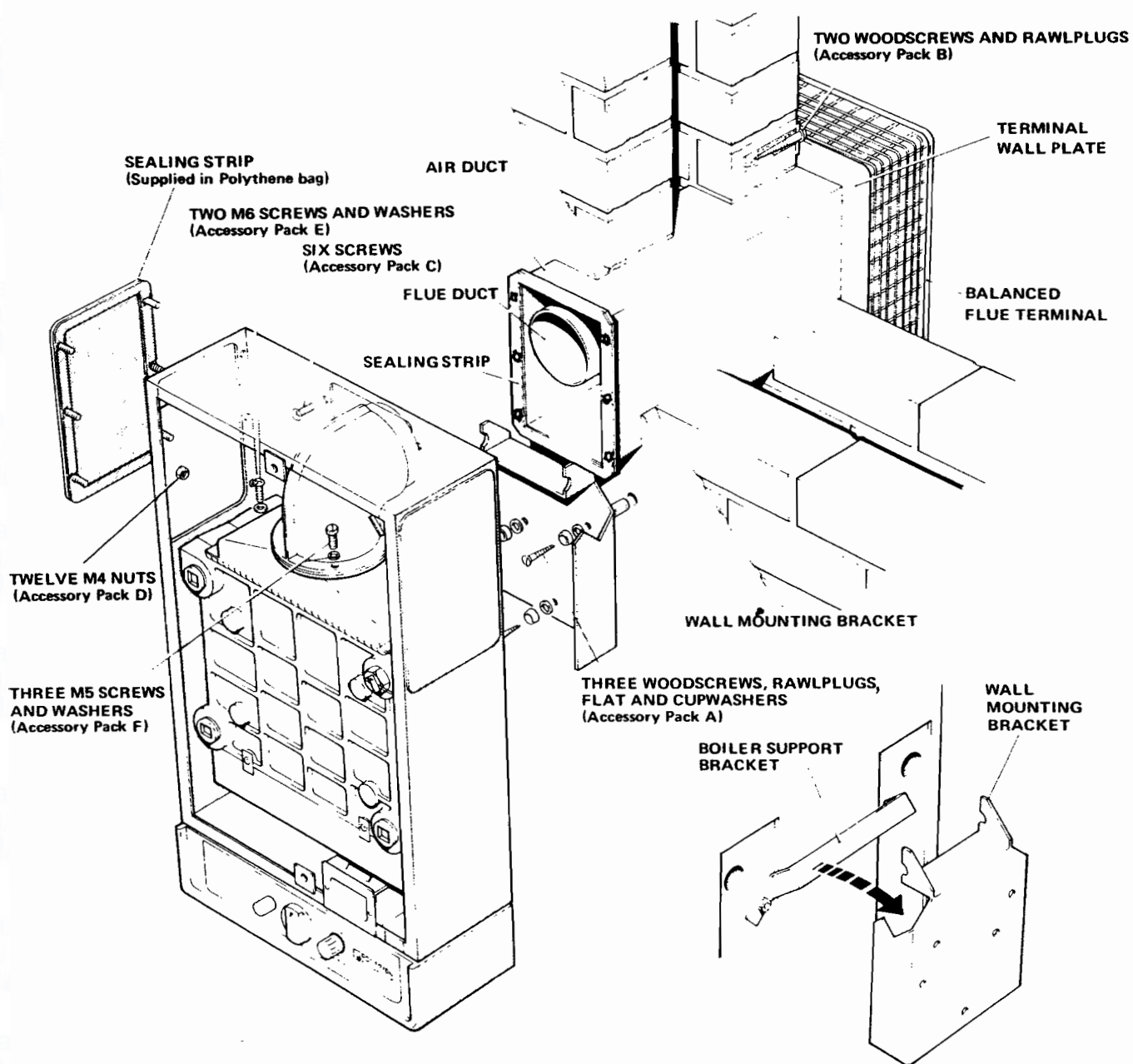


**Fig. 4 MOUNTING FEATURES – BALANCED FLUE MODEL**

positioned, provided the fluehood has been positioned as described in the previous operation.

- C. On the open flue model, fit the flue hood and secure it with the two screws and washers packed separately in a plastic bag, ancillary fastener pack, Pack G.  
Make the flue connection to the socket on the fluehood in accordance with normal practices.
- D. Connect the main gas supply to the length of pipe fitted to the boiler main gas cock.
- E. Connect the short lengths of pipe, previously fitted to the water flow and return connections, to the system pipework.
- F. Open all water valves and thoroughly flush the system.
- G. Fill and vent the water system and test for leaks; rectify if necessary.

- H. Fit the casing front cover to the boiler, securing it with two captive screws, on the open flue model first remove the six nylon thimbles covering the end of the spacing pins.

## 7. WIRING

Care must be taken to ensure that all wiring to the boiler is kept clear of sharp edges and hot surfaces. The incoming cables must enter the boiler from the rear through the upper access hole in the casing and be suitably clamped using the adjacent cable clamp. Outgoing cables must be routed through the lower access hole.

The boiler terminal strip is not designed to accept wiring from all the on-site system controls and therefore, the installer will need to incorporate a suitable junction box. The principle of wiring the boiler and its controls is shown in figure 5. However, the layout of a particular system will itself, govern the most economical location for the junction box and its terminals.

As an optional extra, this boiler is available with a 5-position programmer that can be fitted in front of the boiler terminal strip. Full wiring details covering a variety of systems when using this programmer in conjunction with the Flamingo 20-30 are supplied with the programmer.

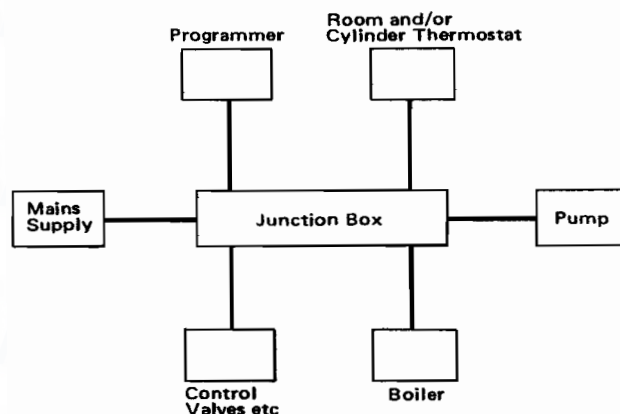


**Fig. 5 PRINCIPLE OF WIRING**

If a wall mounted Potterton EP 2000/3000 Programmer is to be used instead of the five position programmer, wiring instructions will be found in the literature supplied with the EP 2000/3000.

If any other manufacturers time control or programmer is being used, refer to that particular manufacturer's instructions for wiring information.

## 8. FIRST LIGHTING

Before lighting the boiler, checks to ensure electrical safety should be carried out by a competent person. The gas installation, including the meter, must then be tested for soundness and purged in accordance with CP.331, Part 3.

- A. Fit the boiler thermostat knob onto its spindle and switch it to the OFF position.
- B. Check that the main electricity supply to the boiler is switched on.
- C. Turn on the main gas supply.

**WARNING: OPEN ALL WINDOWS AND EXTINGUISH ANY NAKED LIGHTS IN THE ROOM AND PUT OUT PIPES AND CIGARETTES.**

- D. Break the union adjacent to the boiler main gas inlet cock, then open the cock and purge any air from the supply pipe.
- E. Close the cock, remake the union then re-open the cock and test for gas soundness using a soap solution.

**WARNING: DO NOT USE A NAKED FLAME.**

- F. Ensure that the system is full of water and that the pump and radiator isolating valves are open.
- G. Ensure that the time control, if fitted, is in an ON condition, and that the room and/or cylinder thermostats, where fitted, are set to a high temperature.
- H. Turn the control button on the gas control valve clockwise as far as possible (approximately 1/12th

of a turn) and release it. This ensures the valve is in the OFF condition.

- J. Press and hold in the control button on the gas control valve, then press in the igniter button until a click is heard. Release the igniter button but continue to hold in the control button and check through the site hole that the pilot has lit; hold in the control button for a further 20 seconds, then release it and the pilot should remain alight.

**NOTE:** On first lighting, establishment of the pilot flame may be slightly delayed due to the presence of air in the pipework and several operations of the igniter button may be necessary. If the pilot fails to light or goes out at any time, immediately turn the control button clockwise as far as possible (approximately 1/12th of a turn) then release it and wait three minutes before repeating the lighting procedure. The control button should not be touched during this period.

- K. Turn the boiler thermostat on and to a high setting and the main burner will light.
- L. Set the boiler thermostat and the room and/or cylinder thermostat(s) and time control, where installed, to their required operating conditions.
- M. On the open flue model, check that there is no leakage or spillage of combustion products from the boiler down-draught diverter as detailed in BS.5440, Part 1.
- N. Allow the system to reach maximum working temperature and examine for leaks. Drain the system whilst it is still hot, then refill and vent and make a final examination for leaks.
- P. Switch off the boiler, using the thermostat knob.

## 9. FINAL ADJUSTMENT

### A. Gas Rate and Main Burner Pressure Setting

- (1) Remove the sealing screw from the pressure test nipple on the gas control valve, see fig. 1, then connect a pressure gauge to the nipple.
- (2) Turn on the boiler thermostat, then check that the burner pressure is in accordance with Table 2.
- (3) If burner pressure adjustment is necessary, remove the screwed cap on the top of the control valve and turn the screw beneath clockwise to increase pressure or anti-clockwise to decrease. Refit the screwed cap when the pressure is correct. Shut down the boiler, remove the pressure gauge and refit the screw in the pressure test nipple.
- (4) With the burner set to its correct pressure, the firing rate given in Table 2 should also be obtained and this should be checked by meter reading over a period of at least five minutes once the boiler is hot.

### B. Pilot Burner

The burner pressure has been set in our factory and should not need further adjustment. When correctly set, the pilot flame must be sufficient to heat the thermocouple so that the pilot safety device is "held in" but must not cause the thermocouple to glow bright red. If the pilot needs

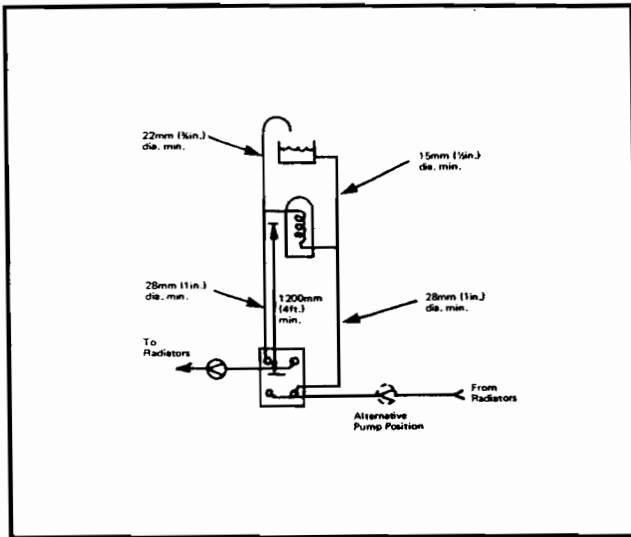


**Fig. 6 GRAVITY HOT WATER WITH PUMPED CENTRAL HEATING**

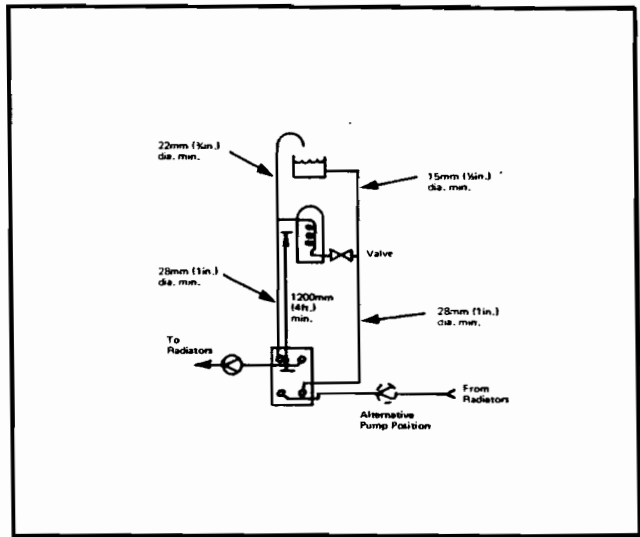


**Fig. 7 GRAVITY HOT WATER WITH TEMPERATURE CONTROL AND PUMPED CENTRAL HEATING**

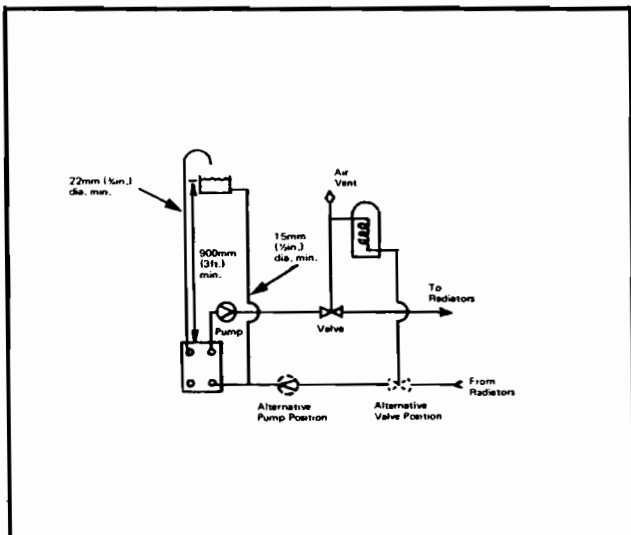


**Fig. 8 FULLY PUMPED WITH TWO POSITION DIVERTER VALVE**

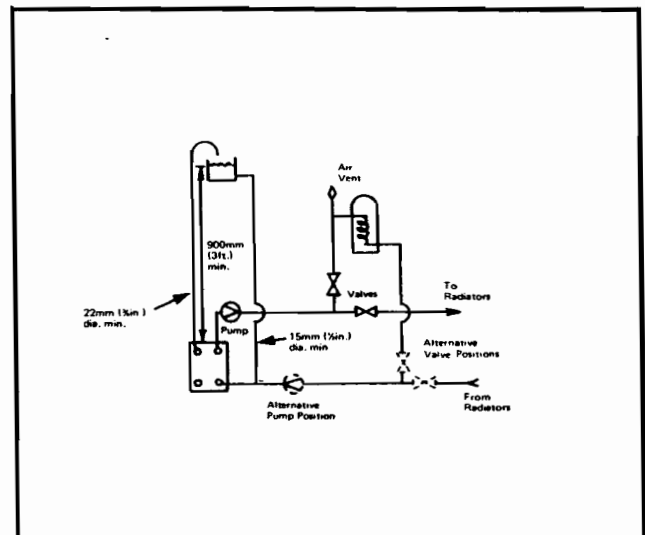


**Fig. 9 FULLY PUMPED WITH ONE OR TWO TWO-WAY VALVES**

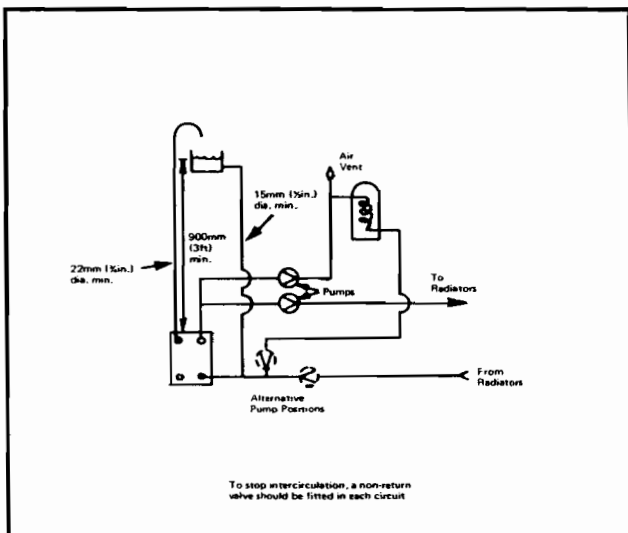


**Fig. 10 FULLY PUMPED USING TWO PUMPS**

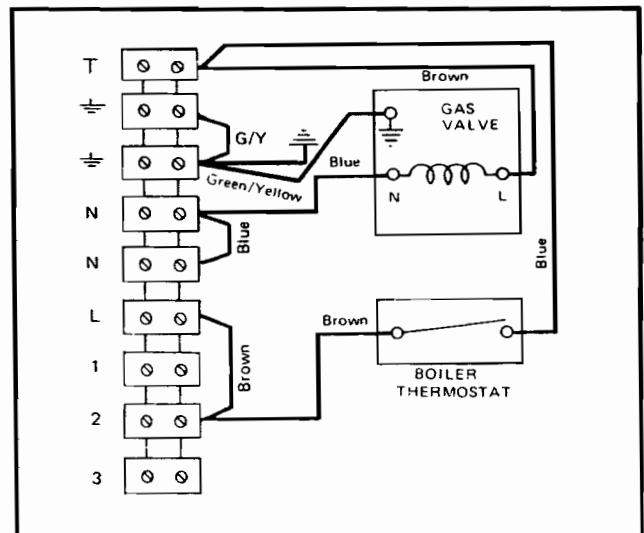


**Fig. 11 BOILER WIRING**

**NOTE:** The minimum 900mm (3ft) static head shown in figs. 8, 9 and 10, and mentioned in section 1 in 'The System' on page 2, can be reduced to 300mm (1ft) providing the cold feed is connected directly into the spare return tapping on the boiler. A static head of less than 300mm (1ft) should not be used.

adjustment, rotate the exposed pilot restrictor screw clockwise to reduce or anti-clockwise to increase the flame, see figure 1.

### C. Boiler Thermostat

- (1) At its maximum and minimum settings, the thermostat should control the water flow temperature at approximately 55°C – 82°C (130° – 180°F) respectively.
- (2) The thermostat has been calibrated by the makers and no attempt should be made to re-calibrate it on site. Turn the thermostat to the OFF position, and check that the main burner shuts down.

### D. Combination Control

#### *Solenoid*

Check the operation of the valve by turning off the electricity supply, either by the isolating switch or the time control, where installed. The main burner must be shut down immediately.

#### *Flame Safety Valve*

Check the operation of the valve as follows with

the boiler running normally:-

Turn the control button clockwise as far as possible and a distinct click should be heard within 60 seconds, indicating that the flame failure valve has closed.

### E. Remote Controls

Check that any other remote control connected in the system such as time clocks and thermostats control the boiler as required.

### F. Controls Cover

- (1) Ensure the electricity supply to the boiler is switched off, then pull off the thermostat knob and refit the controls cover to the boiler.
- (2) Secure the cover with the captive screw, then refit the thermostat knob.

## 10. USER'S GUIDE

A user's guide is provided with this boiler but if possible, the installer should explain the operation of the boiler and system to the householder.

TABLE 2

|                           |                                                                |
|---------------------------|----------------------------------------------------------------|
| Input                     | 7.9 kW to 11.6 kW<br>(27,000 to 39,500 Btu/h)                  |
| Output into Water         | 5.9 kW to 8.8 kW<br>(20,000 to 30,000 Btu/h)                   |
| Output into Air (approx.) | 0.55 kW (1,900 Btu/h)                                          |
| Burner Pressure           | 6.5 to 14.0 mbar<br>(2.6 to 5.6 in. w.g.)                      |
| Injector Size             | Cat. 23, Size 850                                              |
| Gas Rate                  | 0.76 to 1.12 cu.m/h<br>27.0 to 39.5 cu.ft/h                    |
| B.G. No.                  | 41.605.15 – Balanced Flue Model<br>41.605.16 – Open Flue Model |
| Potterton Code No.        | H.A.A.—Balanced Flue Model<br>H.A.B.—Open Flue Model           |

## 11. SHORT PARTS LIST

| Description                            | Potterton Part No. | British Gas Part No. |
|----------------------------------------|--------------------|----------------------|
| Pilot Burner, Q359                     | 402834             | 358 282              |
| Pilot Injector                         | 410917             | 358 232              |
| Solenoid Operator                      | 904750             | 396 693              |
| Ignition Electrode                     | 407651             | 393 686              |
| Electrode Lead                         | 407650             | 358 234              |
| Thermocouple, Q309A                    | 402103             | 390 039              |
| Main Burner Injector, Cat. 23 Size 850 | 410406             | 398 353              |
| Main Gas Valve, V4600                  | 402803             | 393 659              |
| Igniter Generator, Vernitron           | 407627             | 387 951              |
| Thermostat,                            | 404456             | 382 291              |
| Thermostat knob                        | 200277             | 357 634              |

"All descriptions and illustrations contained in this leaflet have been carefully prepared but we reserve the right to make changes and improvements in our products which may affect the accuracy of the information contained in this leaflet"

**POTTERTON**  
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Registered in England No. 439502. Registered Office: Portobello Works, Emscote Rd., Warwick. CV34 5QU.  
Sales Office: Brooks House, Coventry Road, Warwick. CV34 4LL. Tel: 0926 493471

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